

Question ID 90bcc3ea

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	

ID: 90bcc3ea

23, 27, 27, 32, 35, 36, 52

What is the range of the 7 scores shown?

ID: 90bcc3ea Answer

Correct Answer: 29

Rationale

The correct answer is 29. The range of a data set is the difference between its maximum value and its minimum value. For the data set shown, the maximum score is 52 and the minimum score is 23. The difference between those scores is $52 - 23$, or 29. Therefore, the range of the 7 scores shown is 29.

Question Difficulty: Medium

Question ID 304a37da

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ID: 304a37da

Each value in the data set shown represents the height, in centimeters, of a plant.

6, 10, 13, 2, 15, 22, 10, 4, 4, 4

What is the mean height, in centimeters, of these plants?

ID: 304a37da Answer

Correct Answer: 9

Rationale

The correct answer is 9. The mean of a data set is the sum of the values in the data set divided by the number of values in the data set. It follows that the mean height, in centimeters, of these plants is the sum of the heights, in centimeters, of each plant, $6 + 10 + 13 + 2 + 15 + 22 + 10 + 4 + 4 + 4$, or 90, divided by the number of plants in the data set, 10. Therefore, the mean height, in centimeters, of these plants is $\frac{90}{10}$, or 9.

Question Difficulty: Medium

Question ID 8ec5cb70

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ID: 8ec5cb70

A list of 10 data values is shown.

6, 8, 16, 4, 17, 26, 8, 5, 5, 5

What is the mean of these data?

ID: 8ec5cb70 Answer

Correct Answer: 10

Rationale

The correct answer is 10. The mean of a data set is calculated by dividing the sum of the data values by the number of data values in the data set. For this data set, the mean can be calculated as $\frac{6 + 8 + 16 + 4 + 17 + 26 + 8 + 5 + 5 + 5}{10}$, which is equivalent to $\frac{100}{10}$, or 10.

Question Difficulty: Medium

Question ID 5b384052

Assessment	Test	Domain	Skill	Difficulty
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ID: 5b384052

The list gives the mass, in grams, of 5 alpine marmots.
4,010; 4,010; 3,030; 4,050; 3,050
What is the mean mass, in grams, of these 5 alpine marmots?

ID: 5b384052 Answer

Correct Answer: 3630

Rationale

The correct answer is 3,630. The mean of a data set is the sum of the values in the data set divided by the number of values in the data set. The sum of the masses, in grams, of these alpine marmots is $4,010 + 4,010 + 3,030 + 4,050 + 3,050$, or 18,150 grams. The number of alpine marmots in the data set is 5. Therefore, the mean mass, in grams, of these 5 alpine marmots is $\frac{18,150}{5}$, or 3,630.

Question Difficulty: Medium

Question ID a34277bd

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ID: a34277bd

4, 10, 18, 4, 4, 5, 6, 5

What is the median of the data set shown?

- A. 4
- B. 5
- C. 7
- D. 14

ID: a34277bd Answer

Correct Answer: B

Rationale

Choice B is correct. If a data set contains an even number of data values, when the data values are listed in ascending or descending order, the median is between the two middle values. The given data set contains 8 values. When listed in ascending order, the data set is 4, 4, 4, 5, 5, 6, 10, 18 and the two middle values are 5 and 5. Since the two middle values are the same, the median must be 5.

Choice A is incorrect. This value is between the two middle values in the list shown, not the two middle values when the data values are listed in ascending or descending order.

Choice C is incorrect. This is the mean, not the median, of the data set.

Choice D is incorrect. This is the range, not the median, of the data set.

Question Difficulty: Medium

Question ID e8aa0765

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ID: e8aa0765

Five *Eretmochelys imbricata*, a type of sea turtle, each have a nest. The table shows an original data set of the number of eggs that each turtle laid in its nest.

Nest	Number of eggs
A	149
B	144
C	148
D	136
E	139

A sixth nest with **121** eggs is added to create a new data set. Which of the following correctly compares the means of the two data sets?

- A. The mean of the original data set is greater than the mean of the new data set.
- B. The mean of the original data set is less than the mean of the new data set.
- C. The means of both data sets are equal.
- D. There is not enough information to compare the means.

ID: e8aa0765 Answer

Correct Answer: A

Rationale

Choice A is correct. It's given that the table shows an original data set of 5 values. It's also given that a sixth value is added to create a new data set. The new data set consists of the 5 values in the original data set and one additional value, 121. Since the additional value, 121, is less than any value in the original data set, the mean of the original data set is greater than the mean of the new data set.

Choice B is incorrect and may result from conceptual or calculation errors.

Choice C is incorrect and may result from conceptual or calculation errors.

Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Medium